CLAIMS

1. A semiconductor device comprising: a semiconductor substrate, having a photodetecting unit formed on one surface, a thinned portion formed by etching a region, opposing the photodetecting unit, of another surface, and first electrodes disposed on the one surface at an outer edge of the thinned portion and electrically connected to the photodetecting unit;

a wiring substrate, disposed to oppose the one surface side of the semiconductor substrate and having second electrodes connected via conductive bumps to the first electrodes; and

a resin, filling a gap between the wiring substrate and the outer edge of the thinned portion to reinforce the strength of bonding of the respective first electrodes and the respective second electrodes with the conductive bumps;

wherein the wiring substrate is subject to a wettability property processing, by which a first region that surrounds a region opposing the thinned portion and second regions that extend outward from the first region are lowered in wettability with respect to the resin, and

the resin surrounds the periphery of the gap between the thinned portion and the wiring substrate except at the second regions that are portions of the periphery.

2. The semiconductor device according to Claim 1, wherein as the wettability processing, a silicone resin, a polytetrafluoroethylene, or a wax is coated onto the first region and the second regions of the wiring substrate.

3. A semiconductor device comprising: a semiconductor

substrate, having a photodetecting unit formed on one surface, a thinned portion formed by etching a region, opposing the photodetecting unit, of another surface, and first electrodes disposed on the one surface at an outer edge of the thinned portion and electrically connected to the photodetecting unit;

a wiring substrate, disposed to oppose the one surface side of the semiconductor substrate and having second electrodes connected via conductive bumps to the first electrodes; and

a resin, filling a gap between the wiring substrate and the outer edge of the thinned portion to reinforce the strength of bonding of the respective first electrodes and the respective second electrodes with the conductive bumps;

wherein the wiring substrate has formed thereon first protrusions that surrounds a region opposing the thinned portion and second protrusions that extend outward from the first protrusions, and

the resin surrounds the periphery of the gap between the thinned portion and the wiring substrate except at the second protrusions that are portions of the periphery.

4. The semiconductor device according to any of Claims 1 through 3, wherein the photodetecting unit has a plurality of pixels that are arrayed one-dimensionally or two-dimensionally.

5. The semiconductor device according to Claim 3, wherein the first protrusions are discontinuous at the positions of the second protrusions.